

C1  
C2  
A1  
an image grabber generating an image of the tubing segment from the video signals; and

a program in the processor analyzing the image to detect predetermined features of the tubing segment.

sub  
C1  
A2  
9. (Amended) The system of claim 1 wherein the processor generates a signal upon detecting a predetermined feature in the tubing so as to provide a warning of such predetermined feature.

sub  
C1  
A3  
13. (Amended) An inspection system comprising:

a composite coiled tubing having layers of fibers forming a tubing wall, the outermost layer having a longitudinal stripe;

an imaging device recording video signals of a segment of the coiled tubing as the coiled tubing is presented before the imaging device;

a processor receiving the video signals from the imaging device; and

a program in the processor analyzing the video signals to detect the stripe on the tubing segment.

sub  
C1  
A4  
15. (Amended) An automated inspection system for identifying defects in coiled tubing, comprising:

a plurality of imaging devices configured to capture video images of coiled tubing as the tubing passes in front of the imaging devices; and

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CDL 24

a computer system configured to execute pattern recognition software to analyze the images, extract features from the images, and generate an indication if a defect is identified in the images.

20. (Amended) The inspection system of claim 18 wherein if the counter signal indicates that the coiled tubing is moving faster than a threshold, the inspection system is enabled.

26. (Amended) A computer system for use in an automated tubing inspection system comprising:

a processor;

at least one output device;

an input device configured to receive video signals and generate sequential images from the video input;

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a pattern classification software program configured to read the images and extract features from the images and compare the size of these features against user-defined thresholds;

wherein if the pattern classification software determines that the size of the features does not fall within the user-defined threshold, the software generates an interrupt indicating that a defect has been located.

27. (Amended) The computer system of claim 26 further comprising:

an input for receiving location data indicating the position from which the incoming images are taken;

wherein when the pattern classification software generates the warning interrupt, the computer system transmits the image containing the defect and the corresponding location data to the output device.

28. (Amended) The computer system of claim 27 wherein the output device is a printer.
29. (Amended) The computer system of claim 27 wherein the output device is a monitor.
30. (Amended) The computer system of claim 27 wherein the pattern classification software may be trained to recognized unwanted defects and ignore innocuous features.
31. (Amended) A method of identifying defects in a continuous length of coiled tubing, comprising:
- passing the continuous length of coiled tubing in front of a plurality of imaging devices;
  - capturing images of the outer circumference of the tubing with the imaging devices and transmitting the images to a processor;
  - receiving the images by the processor and inputting the images to computer vision software running on the processor; and
  - processing the images on the computer vision software; and
  - identifying predetermined features in the tubing.

32. (Amended) The method of claim 31 further including initiating a warning event upon detecting a defect in the tubing.

33. (Amended) The method of claim 31 wherein the passing step includes guiding the coiled tubing through a guide roller mechanism as the tubing is spooled on or off a storage reel and placing the aperture of a plurality of imaging devices in close proximity to the guide roller mechanism.

34. (Amended) The method of claim 31, further comprising:  
transmitting a depth counter value the processor to identify the position along the tubing at which the images are taken; and  
displaying the image of the features.

35. (Amended) The method of claim 34 further including indicating the position of a defect in the tubing.

36. (Amended) The method of claim 31, further comprising:  
specifying the annular location of a predetermined feature with respect to an annular reference established by at least one longitudinal stripe located on the outer diameter of the tubing; and  
indicating the annular position of the predetermined features.

37. (Amended) The method of claim 31, further comprising transmitting power to operate the imaging devices and transmitting light to illuminate the tubing.

38. (Amended) The method of claim 31, wherein the imaging devices are located on a levelwind that is coupled to a reel on which the tubing is coiled.

39. (Amended) The method of claim 31, further comprising storing the images on recordable media prior to processing the images.

40. (Amended) The method of claim 39, further comprising storing the images with the depth counter value.

41. (Amended) The method of claim 31, further comprising identifying a feature as a defect by determining if the size of an unrecognized feature exceeds a user-designated threshold.

42. (Amended) The method of claim 31, further comprising identifying a feature as a defect by determining if the size of a previously recognized defect has grown beyond a user-designated percentage of its original size.

Please cancel claims 10-12.

Please add the following new claims.

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43. (New) The system of claim 1 wherein the coiled tubing comprises an outer wear layer and a contrasting layer beneath the outer wear layer where if the outer wear layer is worn away, the contrasting layer becomes visible as a contrasting feature on the tubing.

A7 44. (New) The system of claim 43 wherein the coiled tubing further comprises a stripe located on the outer wear layer and parallel to the longitudinal axis of the tubing.

45. (New) The system of claim 44 wherein the coiled tubing comprises more than one stripe located on the outer wear layer and wherein the stripes are individually distinguishable.

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